

### REMARKS

Claims 1 to 31 are pending. Claim 1 is independent.<sup>1</sup> Favorable reconsideration and further examination are respectfully requested.

Claims 5, 6, 8 and 13 were rejected under the second paragraph of §112 for the reasons noted on page 2 of the Office Action. In particular, the Office Action indicates that the phrase "seal with" is unclear. Applicants have therefore replaced that phrase with "seal to". Accordingly, withdrawal of the §112 rejections is respectfully requested. Furthermore, since these claims were not rejected over any art, they are now believed to be in condition for allowance.

Turning to the art rejections, claims 1 to 4, 14, 16, 20 to 22, 28 and 31 were rejected over U.S. Patent No. 6,492,194 (Bureau); claims 1, 2, 7, 27, and 28 were rejected over U.S. Patent No. 5,990,418 (Bivona); claims 1, 2, 28 and 29 were rejected over U.S. Patent No. 6,433,412 (Ando); and claims 12, 15, 23 and 30 were rejected over Bureau.

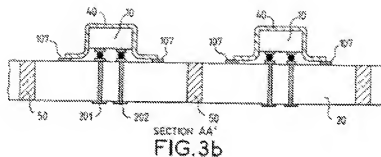
As shown above, Applicants have amended independent claim 1 to recite that the support element and the seal are configured to reduce an affect of mechanical forces on the electrically conductive connections that result from temperature variations. The applied art is not understood to disclose or to suggest this feature.

Referring to Fig. 1 of Bureau, which is reproduced below, film 40 was equated to the claim's seal and ground pads 107 were equated to the claim's support element.<sup>2</sup>

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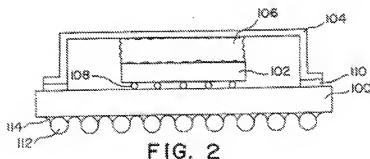
<sup>1</sup> The Examiner is urged to independently confirm this recitation of the pending claims.

<sup>2</sup> Office Action, pages 3 and 4



Ground pads 107, however, constitute electrical contacts, and not support elements.<sup>3</sup> That is, there is no indication that they provide a support function. Moreover, there is no indication whatsoever that film 40 and ground pads 107 are configured to reduce an affect of mechanical forces on the electrically conductive connections (e.g., 105), much less an affect that results from temperature variations.

Referring to Fig. 2 of Bivona, which is reproduced below, lid 104 was equated to the claim's seal and seal 110 was equated to the claim's support element.<sup>4</sup>

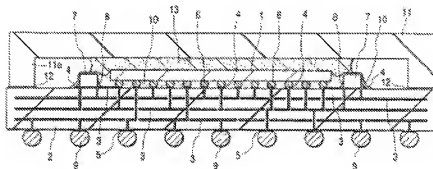


<sup>3</sup> See, e.g., col. 4, lines 25 to 27

<sup>4</sup> Office Action, page 5

As was the case above, there is no indication whatsoever that lid 104 and seal 110 are configured to reduce an affect of mechanical forces on the electrically conductive connections (e.g., 108), much less an affect that results from temperature variations. Temperature variations are addressed by interface coolant 106, which conducts thermal energy from chip 102 to lid 104.<sup>5</sup> However, according to Bivona, temperature is controlled in order to prevent a degradation in chip performance, not to reduce the affect of mechanical forces on the electrically conductive connections (e.g., 108) between the chip and the carrier substrate.<sup>6</sup>

Referring to Fig. 2 of Ando, which is reproduced below, cap 11 was equated to the claim's seal and adhering agent 12 was equated to the claim's support element.<sup>7</sup>



Adhering agent 12, however, is used to fix cap 11 to the substrate 2, and does not provide a support function. Furthermore, there is no indication whatsoever that cap 11 and adhering agent 12 are configured to reduce an affect of mechanical forces on the electrically conductive connections (e.g., 6), much less an affect that results from temperature

<sup>5</sup> Col. 5, lines 59 to 62

<sup>6</sup> Col. 2, lines 46 to 51

<sup>7</sup> Office Action, pages 5 and 6

variations. Instead, Ando includes a heat conductive member 13, which radiates heat from the chip 1 to the cap 11, thereby protecting the chip.<sup>8</sup> An underfill resin 10 -- which is completely unrelated to adhering agent 12 and cap 11 -- "relaxes" thermal stress.<sup>9</sup> The underfill resin 10, however, does not support cap 11, or any other seal for that matter, and therefore cannot be equated to the claim's support element.

For at least the foregoing reasons, claim 1, and the claim that depend therefrom, are believed to be allowable over the art.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney can be reached at the address shown below. All telephone calls should be directed to the undersigned at 617-521-7896.

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<sup>8</sup> Col. 4, lines 46 to 49

<sup>9</sup> Col. 4, lines 23 to 29

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Please apply any fees or credits due in this case, which are not already covered by  
check, to Deposit Account 06-1050 referencing Attorney Docket No. 14219-076US1.

Respectfully submitted,

Date: Dec 28, 2007



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